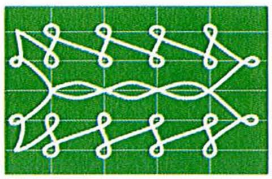

Utilities Regulatory Authority

Commission Order

Case U-0003-14

In the matter of developing regulatory guidelines for Power Purchase Agreements for generation and supply of electricity

June 2015

Contents

Foreword

The Utilities Regulatory Authority (URA) Commission is pleased to issue regulatory guidelines applicable to independent power producers (IPP) entering into power purchase agreements (PPA) for the generation and supply of electricity (case U-0003-14). These guidelines describe the regulatory framework as it pertains to third-party independent power producers generating and selling electricity to utilities. The guidelines and regulatory processes described in this document are designed to improve reliability, promote competition, and clarify the relationship and procedures for utilities and IPPs to transact electric power for the benefit of the Vanuatu consumers.

The URA Commission supports any projects that improve the cost-effective provision of electricity in Vanuatu, either by increasing access where it is currently unavailable, or by improving efficiency and achieving the Commission's goals of least cost generation and promoting renewable energy. Over the longer term, independent electricity generation offers the potential for competition in the market, providing long-term benefits for consumers. The Electricity Supply Act has been amended in recent years to promote competition in generation. The URA encourages and shall facilitate such projects, provide appropriate support to the Government, utilities and investors, and protect the long term-interests of consumers.

There are several ongoing projects that may result in IPPs building generation facilities in Vanuatu for sale of electricity, particularly in the Efate network. One key factor in all of these projects is the drafting and negotiation of the PPA. The current legislative and regulatory framework does not specify the basic parameters of such an agreement. This document describes the parameters and a process that will provide a level of certainty to IPPs and utilities, while also protecting the interests of customers.

By establishing these guidelines, the URA Commission hopes to provide a clear regulatory framework that enables investment in efficient electricity generation capacity throughout Vanuatu.

Johnson Naviti, Chairman

Hasso Bhatia, *PhD*, CEO and Commissioner

John Alilee, Executive Commissioner

1. Introduction

1.1 Purpose of this document

These regulatory guidelines are provided to interested persons in the matter of Power Purchase Agreements (PPA) for the generation and supply of electricity. They explain how independent power producers (IPP) and PPAs will be regulated in the existing electricity networks in Efate, Luganville, Tanna, and Malakula. Included in this document are:

- Clarification of the legal status of IPPs and the regulatory framework
- Description of how IPPs impact consumer prices, and how the price impact will be estimated
- Description of the process for a tariff adjustment due to an IPP arrangement

1.2 Background

All four of the existing electricity networks in Vanuatu (Efate, Luganville, Tanna, and Malekula) are currently vertically integrated, meaning that in each network the generation, transmission, distribution and supply of electricity are all performed by the same company pursuant to an exclusive concession. In 2010 the Electricity Supply Act was amended to, amongst others, specifically allow for electricity to be generated by other parties for sale to the utility concessionaire. To date, no major projects have resulted in such an arrangement. However two significant IPP projects are currently under serious consideration:

- 4MW (expandable to 8MW) geothermal power station at Takara in North Efate
- 500-730kW photovoltaic array on Parliament House and Meteo Building, donated by UAE.

In order to inform these potential projects and other future projects, the URA wishes to set out the regulatory framework for IPP and PPA arrangements.

1.3 Legal context

The legal framework of the energy industry in Vanuatu is primarily based on the following legislation and contracts[1]:

- Utilities Regulatory Authority Act (URA Act)
- Electricity Supply Act
- Geothermal Energy Act
- Concession for the Generation and Public Supply of Electric Power in Port Vila
- Concession contract for the Generation and Public Supply of Electric Power in Tanna island
- Concession contract for the Generation and Public Supply of Electric Power in Malekula island

[1] The contractual situation in Luganville is subject to a new tender process. However any new arrangement will be subject to existing legislation.

2. Regulation of IPPs

2.1 Definitions

For the purpose of these guidelines, an IPP is defined as a generation facility that is built for the sole purpose of selling wholesale power to a utility. This definition does not include small-scale generation by customers, such as with home solar systems as defined in U-0002-14 Final Order July 2014. Power sold by an IPP is referred to as wholesale power, and the price at which it is sold as the wholesale price.

A PPA is a contract between two parties, one who generates electricity in order to sell (the IPP) and one who purchases the electricity (the utility) for distribution and sale to end-use customers. The PPA sets out all of the commercial and technical terms for the sale of electricity between the two parties including the schedule for delivery, wholesale pricing and the term of the agreement. The PPA is a key instrument for project financing as it defines the revenue stream, project parameters, and credit quality of the buyer and seller.

2.2 Role of the regulator

The purpose of the URA is to regulate utilities to:

- Ensure the provision of safe, reliable and affordable electricity services
- Maximize access to electricity throughout Vanuatu
- Promote the long-term interests of consumers
- Ensure Least Cost Generation (LCG)

In the case of IPP projects, the aim of the URA is to:

- Encourage IPP projects that will contribute to least cost generation (LCG) in the long term;
- Ensure that customers benefit from IPP projects through lower prices and/or improved reliability;
- Ensure that consumer electricity prices are timely adjusted to pass the benefits of IPP projects on to consumers; and
- Ensure that IPPs, investors, utilities and consumers are treated equitably and fairly.

In order to achieve its purpose, the URA has the general power to do anything necessary and convenient in the exercise of its functions. Additionally, the URA has the following powers defined by the URA Act:

- Establish and monitor safety and reliability standards for utilities and IPPs
- Set the maximum price that can be charged by a utility
- Set the maximum price that can be charged by an IPP (although the URA does not expect to use this power in most cases, as discussed later in this document)
- Request any specified information or documents from a utility or IPP
- Investigate anti-competitive behaviour
- Require a utility or an IPP to confer with the URA as to the manner in which it carries on any specified activity in relation to electricity services

2.3 Regulation of IPPs

The URA Act defines a regulated service as "the supply of electricity or water to a consumer (for a fee) **and includes all processes leading up to that supply**". The generation of electricity by an IPP is therefore a regulated service, subjecting IPPs to the URA Act. This means that IPPs are subject to the same safety and reliability standards and reporting requirements as utility companies, as well as to the same anti-competitive protections laid out in the URA Act.

The URA determines the maximum price charged by utilities to customers. Purchasing power from an IPP is likely to have an impact on the overall power costs of the utility, and as such will impact consumer prices. It is therefore important for a utility to know the tariff impact of a potential IPP project and how the URA will adjust the consumer price, before signing a PPA

The pricing powers of the URA also extend to wholesale pricing; however it is not preferred to preset by an order of the URA a maximum price to be charged by an IPP. It would be useful for the developer IPP to know how the URA will determine the pass-through of wholesale price to consumer prices in order to facilitate financing and assess the bankability and economic viability of the proposed project.

Further, the URA Act (as amended) defines an electricity producer as "a person who generates electricity for sale to a utility and who is not a related entity to that utility". The role of the URA in dispute resolution includes assisting to resolve disputes between a utility and an electricity producer, at the request of any party involved.

In summary, the role of the regulator is to ensure fair market practice and that IPPs and PPAs deliver consumer benefits, by doing the following:

- Ensuring the IPP leads to least cost generation for the utility system and meets their requirements
- Timely adjusting prices to pass through benefits to consumers as a result of IPP generation;
- Preventing anti-competitive behavior; and
- Resolving disputes between the parties having or entering into a PPA.

3. IPP impact on consumer prices

The viability of an IPP is assessed based on its ability to produce power at a lower cost than existing or alternative generation options available to the utility. By purchasing power at a lower cost than it can generate, a utility reduces its overall costs, which then can be translated into lower prices for customers. In practice this means that a utility needs to have a clear view of the prices it can charge the consumer before it signs a PPA with an IPP. In order to provide this certainty, the URA will issue an order describing the tariff adjustment that will apply upon the commissioning of the IPP generation unit.

3.1 Conditions for tariff adjustment

In order for the URA to determine the tariff adjustment as a result of a PPA, the negotiating parties should demonstrate the following:

1) **Least cost generation:** This is defined as the most cost-efficient means of electricity generation, over the longer term. An IPP will contribute to least cost generation if the average total cost of delivered energy when their energy production is added to the generation mix is lower than when compared to other feasible options.
2) **Customer benefit**: Customers will benefit from improved generation efficiency through lower prices. It is possible for customers to benefit from improvements in service quality, reliability or price stability, even if prices are not reduced.
3) **Fair treatment of all parties:** There should be a realistic and fair balance of risk and no unreasonable excess profit margins for any party.

The first test of the competitiveness of a proposed IPP arrangement is to compare the estimated levelised cost of energy of the IPP with the variable costs of existing generation it will be replacing. If the IPP's price of delivered electricity (including delivery costs) is lower than the variable cost from the highest priced electricity generator of the utility, then it is likely that IPP purchase will contribute to least cost generation. The optimum generation mix can be estimated by performing re-dispatch analysis, with and without the IPP, indicating whether or not generation costs can be reduced in the short or long term.

Therefore in order to calculate the impact on the overall cost of electricity, the IPP must first estimate their levelised cost of energy (LCOE), including capital costs, at which it is willing to sell energy to the utility. The utility must then asses how much this will affect their average production costs taking into account the following:

- Avoided cost of fuel and any other operating cost reductions
- Impact on spinning reserves of intermittent power sources
- Distance to load centres and cost of additional transmission network
- Network strengthening and reinforcement
- Impact on system losses
- Assets stranded

Any subsidies or aid donations included in the IPP arrangement should be reflected in its costs.

4. Application process

Although within its legal authority, at this time the URA does not require that an IPP seek a PPA approval from the URA. It should however inform the URA that an IPP is being planned with general profiles of the project, utility need, costs. This Order describes the factors the URA is likely to consider when assessing the impact on the utility's costs and consumer prices resulting from the PPA, and how it may affect system reliability.

In tandem with the PPA negotiations, the utility should make a Tariff Adjustment Application outlining the details of the project and the tariff impact resulting from the proposed purchase of power from the IPP. This should be done in all cases, regardless of whether the utility considers the PPA to be tariff neutral. Ideally it should be a joint application supported by a draft PPA, however separate applications can be made if there is no initial mutual agreement. In such cases, the IPP may file an application with the URA supporting its project and the proposed PPA and indicate points of disagreement with the utility, and the URA can assist with discussions and potentially resolve any disputes. In the event dispute cannot be resolved informally, either party may file a formal complaint with the URA as provided in section 19 of the URA Act.

In case of an application filed by a utility seeking approval of a tariff adjustment to cover PPA costs, a detailed analysis of the options, costs and quantities must be provided to justify the PPA. The URA believes it is primarily the responsibility of the utility to establish that the PPA is the least cost generation option for its incremental power.

At a minimum, the following documents should be provided, described further below:

1. Tariff Adjustment Application
2. Draft PPA
3. Supplementary information

4.1 Tariff Adjustment Application

In order to fully assess the impact that the IPP will have on consumer tariff, the application for a tariff adjustment should include:

- Demonstration of the need for the purchased quantity, based on demand/capacity balance, adequate reserves, etc.
- Cost assumptions
    - IPP build costs
    - Running costs
    - Useful lives of generation equipment and amortization schedule
- Avoided costs over the project life
    - Short term costs (e.g. fuel saved)
    - Long term costs (e.g. incremental capital cost, disposition of stranded assets)
- Calculation of cost of production per kWh (PPA tariff)
- Changes to tariff adjustment formula (if applicable)

The Tariff Adjustment Application document should demonstrate how the tariff is calculated, and provide supporting information for assumptions (i.e. quotations, cost estimates, benchmark data). If there are factors that are either highly variable or unpredictable (e.g. build costs), the application should include any conditions that could vary the tariff adjustment. For example, the tariff application should include a description of how the benefits of any major cost savings during the facility construction will be shared with customers.

4.2 Draft PPA

Supporting the Tariff Adjustment Application, a draft PPA should be provided to the URA. The draft PPA is a document that will set out the legal agreement between the utility and the IPP.

The draft PPA should include the following information:

PPA section	Description
Purpose of the contract	This should be a brief outline as to what the aim of the PPA is, i.e. what the desired outcome is.
Definitions	All terms in the draft PPA must be clearly defined so there can be no misinterpretation and the language used should be exact.
Description of the facility	This should list exactly what the proposed IPP facility is, fuel type or whether renewable, size, base load or intermittent, etc. and list any equipment that belongs to it. This should also include the details of the construction and commission of the power plant, for instance if the power plant is being fully or partially funded by a donor agency;
Delivery of products and connection to the grid	This section should cover any obligations to buy or sell the products, for instance whether the buyer is obligated to purchase all electricity produced not taking into account its demand, option purchase, etc. In addition it should include the scheduling and delivery of the energy as well as what will happen if there is a failure of the seller to deliver the energy, i.e. what consequences there will be for the seller and what compensation, if any, will be due. Conversely there should be details as to what happens if the buyer fails to accept delivery of the electricity produced. Also include any minimum quantities guaranteed by the seller As well as the delivery of energy there should also be details of where the connection to the grid will be, and provision for changes to this if necessary.
Performance of contract	This includes the seller notifying the buyer about performance, as well as details of conditions for allowing the purchaser to visit the IPP site, verify operations, etc.
The effective date and the term of the agreement	The effective date is the day from which the agreement begins and the term of the PPA is the length.

Price and payments	This should set out the price for the electricity over the term of the contract. While in some cases the price may not be fixed, it should be clear what the price is linked to. The contract payments should be in Vatu so as to protect the buyer and ultimately the consumer from exchange rate risks. This section may also include for instance change in the prices if the project over runs, or if there is not enough demand to accept all the electricity being produced. While it is the responsibility of the seller that the project is bankable and meets lender/investor criteria, the tariff methodology should clearly define the major parameters to allow parties to fully understand the terms of the PPA and the economic viability of the project. And that revenue generated will sufficiently cover reasonable costs, including capital costs. From the regulatory perspective, the main criteria is whether the tariffs required by the PPA are reasonable and contribute to the utilities least cost obligation.
Breaches of contract, limitation of liabilities, suspension, amendment and fermentation of the contract	This should cover what will happen if there are breaches in the contract from either party as well as any possible remedies. In addition it should state under which circumstances the contract can be suspended or amended.
Insurance and warranties	This should detail what insurance is in place for the IPP in relation to the business as well as the assets, and who bears the cost of the insurance.
Mutual covenants and force majeure	There should be a section stating under what circumstances there can be outages for maintenance and what happens in the case of a force majeure, stating exactly what this covers. In addition the allocation of dispute costs should be outlined.
Taxes and legal issues	This section should detail whether any changes in tax which result in an increase or decrease in the cost of producing electricity are passed onto the buyer as well as which party incurs the expense of acquiring and maintaining permits and licenses etc.
Applicable laws	The laws applicable to the PPA will be Vanuatu law and this should be stated in the contract

4.2.1 PPA Term

The Term of the PPA is an important factor for project viability assessment. Lenders and investors will look for a long term PPA that will ensure capital recovery. It may also be beneficial for the buyer to enter into a long term agreement as this would provide price stability, adequate capacity and reliability. The URA will take both of these factors into account when considering a proposed term of the PPA. However the URA also has the aim of ensuring least cost generation is achieved and by agreeing to long term PPA's with fixed prices, the URA is limiting its options to seek cheaper energy for the consumer in the future, therefore it is the URA's belief that there must be a balance between the two conflicting goals.

The URA believes that the length of the loan period and debt service is the important element in the IPP and PPA terms. Typically lenders extend debt for a period of 10-12 years. This is critical factor in a PPA structuring, cash flows, etc. Therefore, a reasonable approach would be to set the PPA term matching the

term of the loan. This encourages the developer to seek and garner longer term loans and thereby lower debt service and cash flow requirements. For depreciation/amortization purposes a straight line method over the life of the project shall still be used.

Another factor regarding the PPA term is in relation to the length of concession contract held by the utility. In a case where a proposed PPA extends beyond the end of a utility's concession contract, the Government should co-sign the contract to guarantee that the PPA terms will be included in any re-tender of the utility concession. Additionally, the URA Tariff Adjustment Order will continue to apply after the end of the concession contract, meaning that the consumer price pass-through mechanisms will be maintained for the new utility. This provides the IPP with the required assurance that the PPA terms will be included in any subsequent utility contractual arrangements.

4.3 Supplementary information

In addition to the tariff adjustment and the draft PPA, some supplementary information should be included. The type of information depends on the IPP but may include:

1. Funding sources and length of the loan and terms of the loan (especially donor funds)
2. Analysis of the risk factors involved, both construction and operation and who bears the risk
3. Demand forecasts to demonstrate the need and consumption potential for electricity produced
4. Environmental and social impact assessment
5. Transmission agreement and connection point

4.3.1 Transmission Arrangements

Central to a PPA is the agreement between parties as to the point of delivery of the IPP off-take, and responsibility for bringing power to that delivery point.

Transmission planning is an integral part of generation planning when new generation capacity is envisaged-be it utility-owned or an IPP. Primarily it is the obligation of the power producer to plan for and invest in any line extension to connect from the bus bar to the nearest grid. This investment is an important factor in evaluating the economic viability and LCG. The line extension and connection costs are separately analyzed as it may have broader impact on system stability, losses, and in some cases locational decisions for the IPP. A Transmission Agreement is a companion to but separate from the PPA. Sometimes the costs of transmission may be rolled into the PPA. In other cases the off-taker may agree to the line and connection investment. A great deal of buyer-seller cooperation is necessary to arrive at a transmission agreement, connection terms, etc. The URA shall treat the transmission arrangement as an integral element of assessing the IPP viability, consumer price impact and the PPA approval process.

4.4 Decision process

Once an application for a tariff adjustment is received, it will be reviewed by the URA. If additional information is required from any of the parties, this will be requested by the URA in the process of drafting its Preliminary Decision.

4.4.1 Preliminary Decision

The URA will analyse the data provided and will issue a preliminary decision. The Preliminary Decision will be subject to public consultation, respecting any relevant confidentiality issues. If the URA believes that the proposed arrangements are not optimal, the URA may recommend amended terms.

4.4.2 Consultation

As the PPA will have an effect on consumer prices, the suggested tariff adjustment will undergo public consultation. This will be particularly important in the case of a potential increase in short term tariffs, even if there is a long term benefit. In the case that there is any disagreement between the parties involved, the consultation period may include discussions between the parties in order to come to a resolution. After a period of time, if this has not happened the URA may recommend that there is pause period followed by a new draft PPA.

4.4.3 Final Order

Once feedback from all stakeholders has been considered, a Final Order will be made on the tariff adjustment. This will be based on all information gathered to that point, and will provide a clear description of any tariff adjustment, the conditions upon which it is dependent, and the implementation process.

4.4.4 Affirmation by the URA

When the URA approves the tariff adjustment (pursuant to the detailed review of the terms of the PPA and benefits to the consumers) the URA is basically granting a clearance to the IPP and the utility that the PPA costs shall be allowable expenses in the retail tariffs when the project is complete and commissioned. It would be unfair of the URA to second guess whether the project is cost effective and least cost at the time of its commissioning. Therefore, if the IPP is successfully completed and delivering power as agreed in the PPA, then the URA commission is committed to allow the pass-through of costs incurred according to the PPA terms previously approved.

5. Submissions

Two submissions were received in response to the Preliminary Guidelines document, from UNELCO and Geodynamics. This section describes some specific issues raised in the submissions, and summarises the URA Commission's findings.

5.1 Assurances to IPPs

In UNELCO's submission, three specific questions were raised around specific assurances that the URA could provide to IPPs. These questions are shared and responded to below:

> *...does the Government of the URA wish to provide...some level of assurance that the generation costs will be fully recovered through customer end-tariffs (Since UNELCO will naturally condition the procurement and continued payment of any IPP generation to the fact that such costs can be fully recovered from the end-consumer)?*

Thrust of this document is to bring a level of certainty to buyer and seller that once approved and found reasonable, URA shall stand behind its commitment to allow cost recovery. In order for a third party (and a utility) to be assured that the costs associated with an IPP are passed through to customers, these guidelines describe the process through which a Tariff Adjustment will be applied for and processed. A URA Order confirming the impact on consumer tariffs of an IPP will provide the necessary assurance to both parties. This is further affirmed in Section 4.4.4 above.

> *...does the Government or the URA with to provide...some level of assurance that it will step in to take over the power purchasing contract after the natural term of UNELCO's concession in 2032 (since the concessionaire can naturally only commit to generation contracts over the term of its concession agreement)?*

This issue is discussed in section 4.2.1 above. In cases where an IPP desires a PPA to be longer than the remaining length of a concession contract, the understanding shall be between Government and the concessionaire whether the successor entity is willing to assume the contract; however URA shall honour the PPA under the initial terms, regardless of who the successor buyer is. It would be prudent that URA shall be consulted when a transfer of concessionaire is undertaken.

> *...does the Government or the URA wish to determine a base level of expected safety and environmental practices that should be respected by potential IPPs?*

As mentioned in section 2.3 above, an IPP is defined to be a utility and is subject to any safety and reliability standards issued by the URA. Furthermore, an IPP would also be subject to any other relevant planning, safety, environmental and other regulations issues under Vanuatu law.

5.2 Powers of the URA

In UNELCO's submission, various claims were made regarding the legal power of the URA to regulate IPPs and PPAs, in particular questioning the power of the URA to regulate IPPs. The URA Commission is satisfied that everything in these guidelines is within the power of the URA.

5.3 Forecasts of diesel price

In Geodynamics' submission, they state:

> *In a diesel dominated production environment the calculation of "minimizing long-run incremental (marginal) costs" at a minimum requires a long-run forecast of the diesel price. Geodynamics would like to better understand how the URA will make these forecasts.*

When making assessments around the future generation mix, some kind of assumption of the diesel price must be made. In cases where long-term forecasts are required, the URA will make use of any publicly available forecasts applicable in the region, such as by SPC, and formulate scenarios to reasonably inform decision making.

5.4 Government policy incorporated into tariff setting

In Geodynamics' submission, they state:

> *Given the Governments clear policy direction of meeting aggressive renewable energy targets, Geodynamics would like guidance as to how Government policy is incorporate into tariff setting.*

The URA agrees that there is a clear Government policy to increase the use of renewable energy in Vanuatu. Furthermore there is also a clear mandate to the URA under the URA Act to ensure the affordability and least cost generation. In order to balance these, the URA will seek to ensure that the cost benefits of any renewable energy project are passed on to consumers, making energy more affordable. In a situation where additional renewable energy is possible with an increase in tariffs, the URA will consult with the Government and the public before arriving at a conclusion. Primary driver however would be cost minimization to end user, subject to renewable policy considerations. Other factors such as fuel diversity, reliability, local economic impacts may also enter into the equation. For example marginal costs differences would dictate in favour of renewable, other things being equal.

6. Commission order

Findings

Based on the staff analysis and submissions received, the Commission finds that:

- Competition in the power generation is important factor for long term cost reductions and efficient power supply
- It is important for the URA to support potential IPP projects that can benefit electricity customers in Vanuatu
- Clarifying the impact of an IPP on the consumer is a key role for the URA in the development of an IPP project
- URA must provide assurance to potential parties to a PPA that the approved terms are honoured
- A Tariff Adjustment Application process, as described in this Order, will provide the URA with the required information to determine the impact of an IPP on the consumer price
- The URA has the power to do all things described in this Order

The Commission therefore:

1. Establishes that a utility or potential IPP may submit a Tariff Adjustment Application prior to signing a PPA following the Guidelines described above.
2. Recommends that UNELCO and the Department of Energy submit a Tariff Adjustment Application for the solar generation system to be installed at Parliament House and the Meteo Building, at an appropriate time.
3. Recommends that UNELCO and Geodynamics submit a Tariff Adjustment Application for the proposed geothermal station at Takara, at an appropriate time.

7. Execution Page

CEO and Commissioner

Hasso C. Bhatia, PhD

Date 18/6/15

Chairman

Johnson Naviti Matarulapa Marakipule

Date 18/06/15

Executive Commissioner

John Alilee

Date 18/6/15

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